TOSHIBA PHOTOINTERRUPTER INFRARED LED + PHOTO IC

TLP1205

TIMING SENSOR FOR COPIER, FACSIMILE, ELECTRONIC PRINTER

TIMING DETECTION OF ENGINEERING WORK AND CONTROL EQUIPMENT

EDGE SENSOR, OPTOELECTRONIC SWITCHES

The TLP1205 is a digital output photointerrupter with an GaAs infrared LED and a Si photo IC incorporated in the same package with a connector provided.

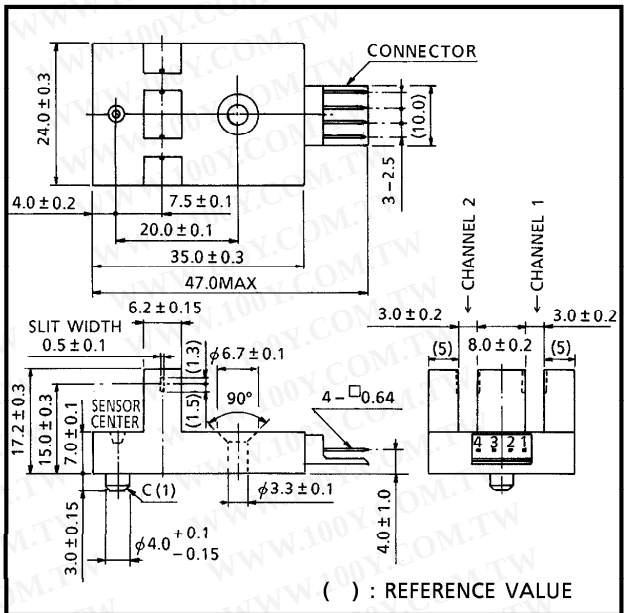
This product has 2 detecting gaps through which independent 2 channel outputs are obtained.

This product is the position detecting sensor suited to automated control of equipment.

When detecting a substance (when the light is shielded), the output becomes low level.

- One side mounting type.
- Supply voltage : 5V
- Digital output (with a pull-up resistor)
- Gap (2) : 3mm
- Resolution : Slit width 0.5mm
- Large output current : I_{OL} = 50mA (max)
- Mounting, circuit connection, maintenance, etc. are easily performed by the connector.
- Material of the package : Polycarbonate

Unit in mm



JEDEC	—
EIAJ	—
TOSHIBA	11-24A1

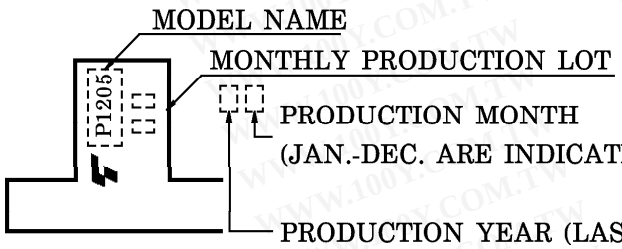
Weight : 6g (typ.)

CONNECTOR

171825-4 (AMP (Japan), Ltd. made EI Connector)

勝 特 力 材 料 886-3-5753170
胜特力电子(上海) 86-21-34970699
胜特力电子(深圳) 86-755-83298787
Http://www.100y.com.tw

PRODUCT INDICATION

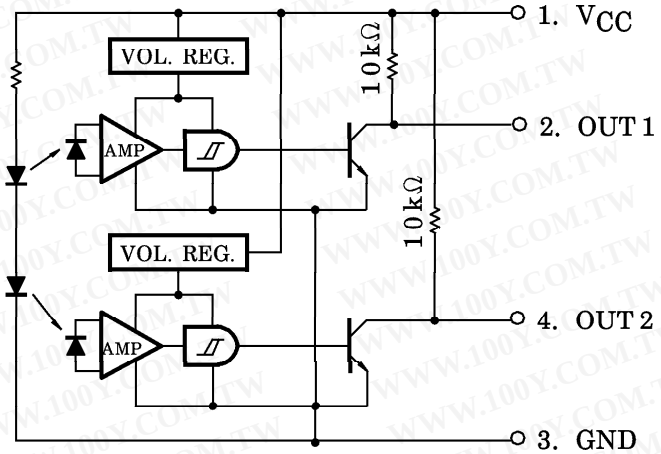


STAMP COLOR : SILVER

961001EBC2

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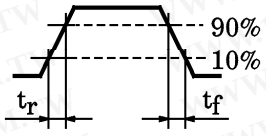
PIN CONNECTION



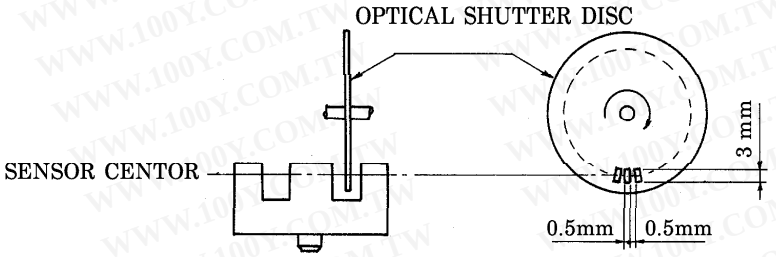
MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltge	V_{CC}	6	V
Output Voltage	V_O	$V_{CC}+0.5$	V
Low Level Output Current	I_{OL}	50	mA
Operating Temperature Range	T_{opr}	−25~75	°C
Storage Temperature Range	T_{stg}	−40~85	°C

ELECTRICAL CHARACTERISTICS (Unless Otherwise Specified, Ta = −25~75°C, V_{CC} = 5 ± 0.5V)

CHARACTERISTIC			SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Voltage			V_{CC}	—	4.5	—	5.5	V
Supply Current	Low Level		I_{CCL}	Shutter In	—	—	30	mA
	High Level		I_{CCH}	Without Shutter	—	—	30	
Low Level Output Voltage		CH. 1	V_{OL1}	Shutter In, I_{OL} = 16mA	—	—	0.4	V
		CH. 2	V_{OL2}	Shutter In, I_{OL} = 16mA	—	—	0.4	
High Level Output Voltage		CH. 1	V_{OH1}	Without Shutter	$0.9V_{CC}$	—	—	
		CH. 2	V_{OH2}	Without Shutter	$0.9V_{CC}$	—	—	
Peak Emission Wavelength			λ_P	Ta = 25°C, LED Side	—	940	—	nm
Peak Sensitivity Wavelength			λ_P	Ta = 25°C, Phto IC Side	—	900	—	nm
Response Frequency			f	Ta = 25°C (Note)	3000	—	—	Hz
Rise Time			t_r		—	2	—	μs
Fall Time			t_f		—	0.03	—	

(Note) A value measured when the disc shown in the following figure was rotated. No DC current should be output.



PRECAUTION

Please be careful of the followings.

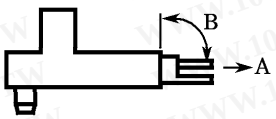
1. During 100μs after turning on V_{CC}, output voltage changes for stabilizing the inner circuit.
2. Install to the mount free of warp with the clamping torque 0.59N·m max
3. The container is made of polycarbonate. Polycarbonate is usually stable with acid, alcohol, and aliphatic hydrocarbons however, with pertochemicals (such as benzene, toluene, and acetone), alkali, aromatic hydrocarbons, or chloric hydrocarbons, polycarbonate becomes cracked, swollen, or melted. Please take care when chosing a packaging material by referencing the table below.

<Chemicals to avoid with polycarbonate>

	PHENOMENON	CHEMICALS
A	Little deterioration but staining	• nitric acid (low concentration), hydrogen peroxide, chlorine
B	Cracked, crazed, or swollen	• acetic acid (70% or more) • gasoline • methyl ethyl ketone, ehtyl acetate, butyl acetate • ethyl methacrylate, ethyl ether, MEK • acetone, m-amino alcohol, carbon tetrachloride • carbon disulfide, trichloroethylene, cresol • thinners, oil of turpentine • triethanolamine, TCP, TBP
C	Melted { } : Used as solvent.	• concentrated sulfuric acid • benzene • styrene, acrylonitrile, vinyl acetate • ethylenediamine, diethylenediamine • {chloroform, methyl chloride, tetrachloromethane, dioxane, 1, 2-dichloroethane}
D	Decomposed	• ammonia water • other alkali

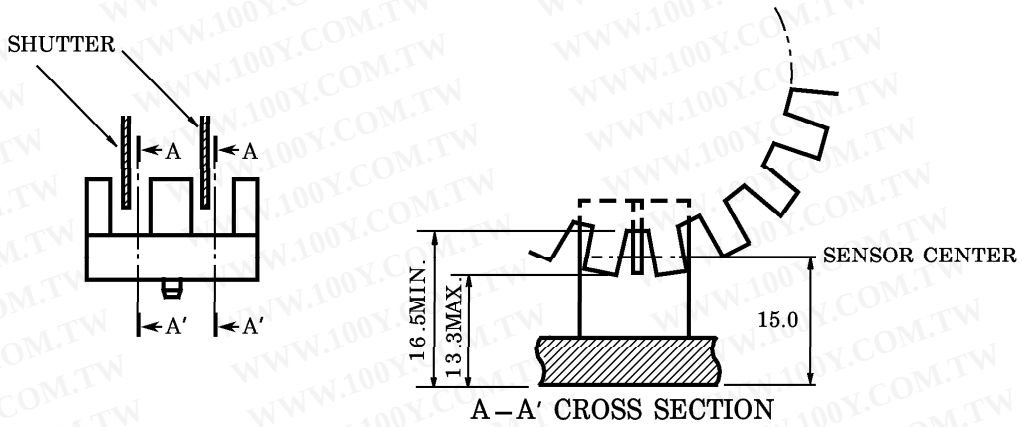
TERMINAL STRENGTH (Ta = 25°C)

CHARACTERISTIC	TEST CONDITION		LIMIT
PULL	DIRECTION	A	NO DEFECT OF ELECTRICAL CHARACTERISTICS
	WEIGHT	19.6N	
	TIME	5s / ONCE	
BEND	DIRECTION	B	
	WEIGHT	9.8N	
	TIME	5s / THRICE	



POSITIONING OF SHUTTER AND DEVICE

To operate correctly, make sure that the shutter and the device are positioned as shown in the figure below.
The shit pitch of the shutter must be set wider than the slit width of the device.
Determine the width taking the switching time into consideration.



A–A′ CROSS SECTION

RECOMMENDABLE MATCHED CONNECTOR

AMP (Japan), Ltd. made EI series connector (Standard type)

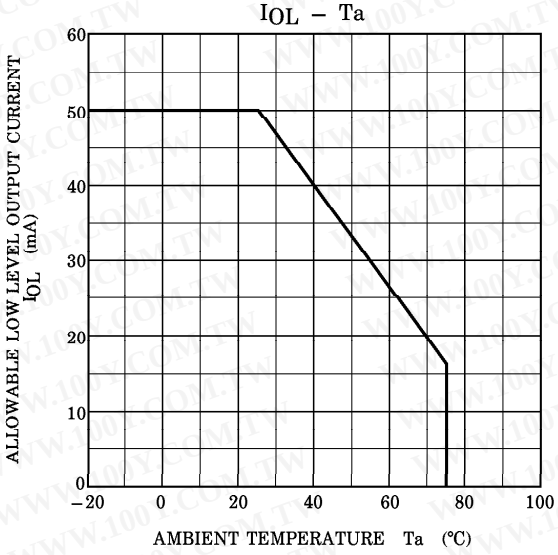
HOUSING	NATURAL COLOR	BLACK	BLUE	GREEN	RED
	171822-4	2-171822-4	4-171822-4	6-171822-4	8-171822-4
TERMINAL	TYPE No.	PRODUCT FORM	MATERIAL	AWG SIZE	INSULATION DIAMETER
	170204-1	LOOSEN	BRASS	AWG20~26	1.1~1.9mm
	170204-2		PHOSPHOR BRONZE		
	170262-1	LINKED	BRASS		
	170262-2		PHOSPHOR BRONZE		
	170205-1	LOOSEN	BRASS	AWG26~30	1.0~1.4mm
	170205-2		PHOSPHOR BRONZE		
	170263-1	LINKED	BRASS		
	170263-2		PHOSPHOR BRONZE		

AMP (Japan), Ltd. made EI series connector (Low profile type)

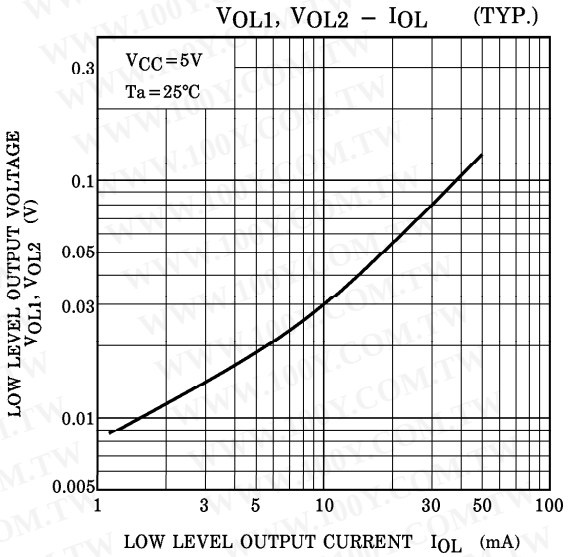
HOUSING	NATURAL COLOR	BLACK	BLUE	GREEN	RED
	172142-4	2-172142-4	4-172142-4	6-172142-4	8-172142-4
TERMINAL	TYPE No.	PRODUCT FORM	MATERIAL	AWG SIZE	INSULATION DIAMETER
	170369-1	LOOSEN	PHOSPHOR BRONZE	AWG22~26	1.1~1.9mm
	170354-1	LINKED			
	170370-1	LOOSEN		AWG26~30	1.0~1.5mm
	170355-1	LINKED			

For details of the connectors, please refer to the connector maker.

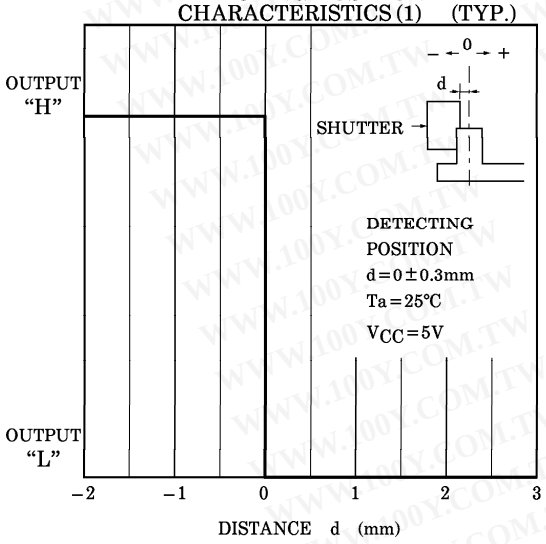
I_{OL} – Ta



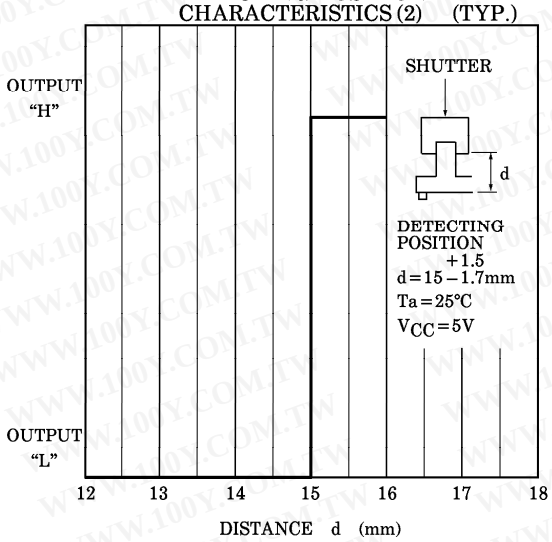
V_{OL1}, V_{OL2} – I_{OL} (TYP.)



DETECTING POSITION CHARACTERISTICS (1) (TYP.)



DETECTING POSITION CHARACTERISTICS (2) (TYP.)



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